

$$F_{\nabla} = 2\pi \cdot r^3 \frac{\sqrt{\epsilon_B}}{c} \left( \frac{\epsilon - \epsilon_B}{\epsilon + 2\epsilon_B} \right) (\nabla \cdot I)$$

$F_{\nabla}$  = Optical force on particle towards higher intensity

$r$  = Radius of particle

$\epsilon_B$  = Dielectric constant of background medium

$\epsilon$  = Dielectric constant of particle

$I$  = Light intensity ( $\text{W}/\text{cm}^2$ )

$\nabla$  = Spatial derivative

**FIG. 1**

FIG. 2

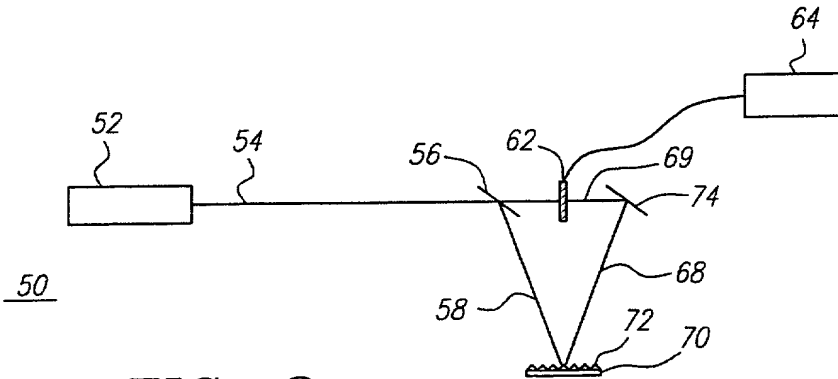
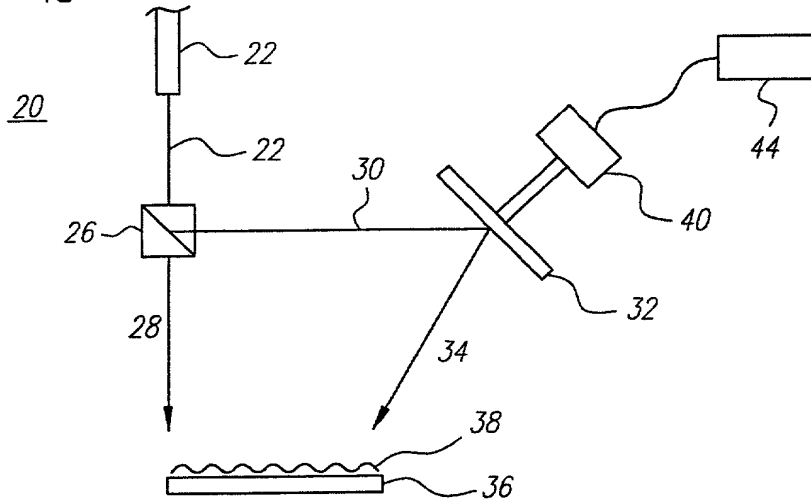


FIG. 3

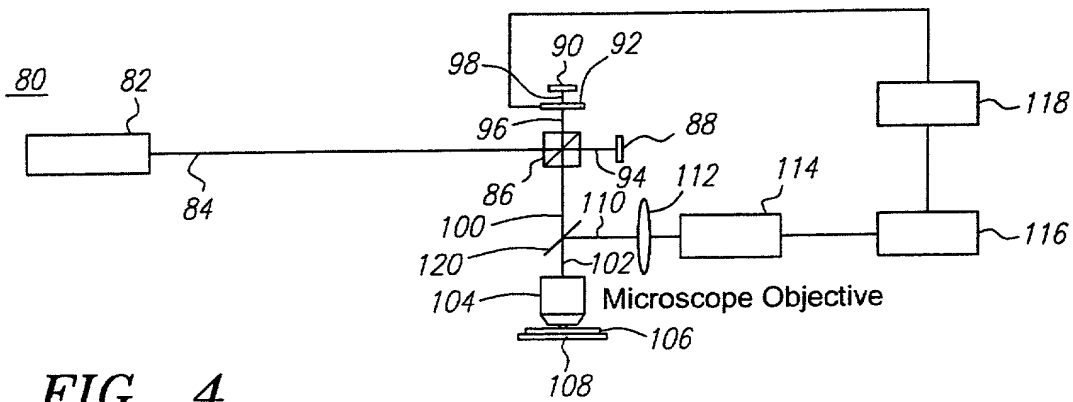
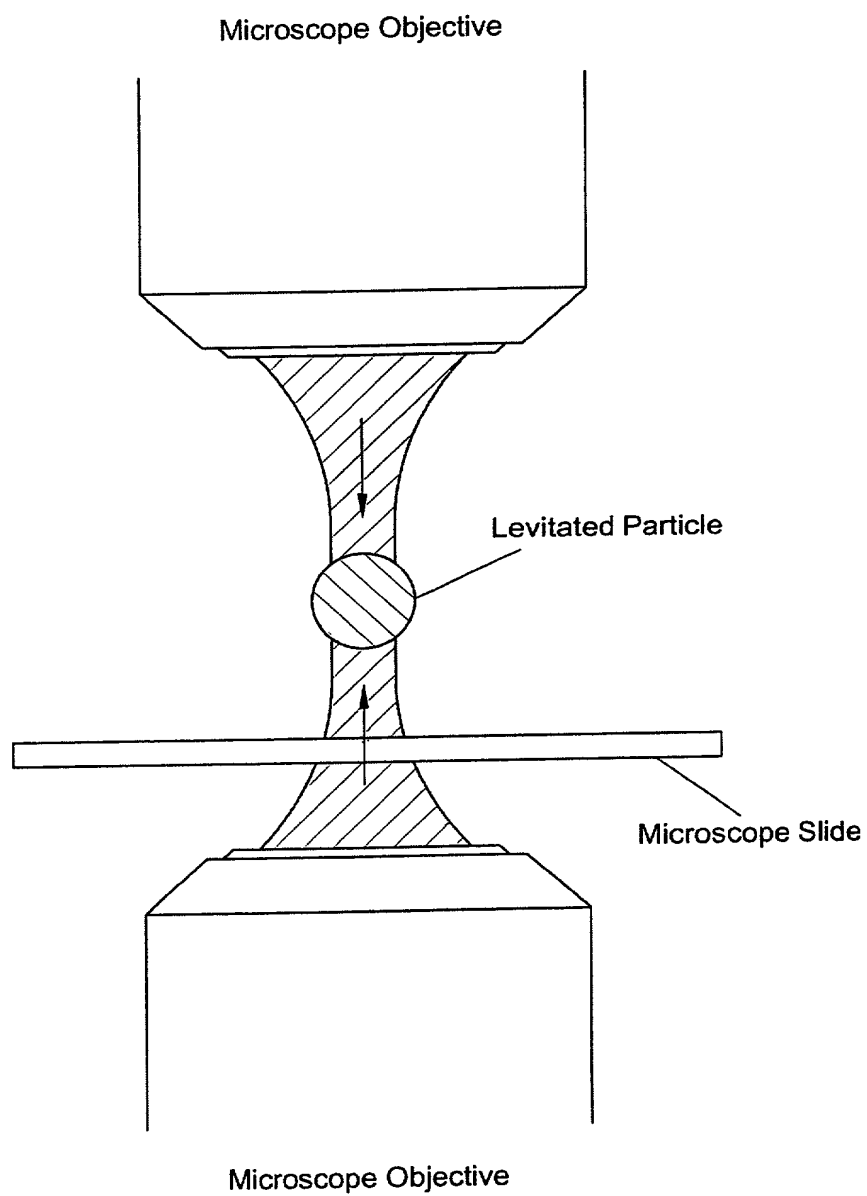


FIG. 4



**FIG. 4A**

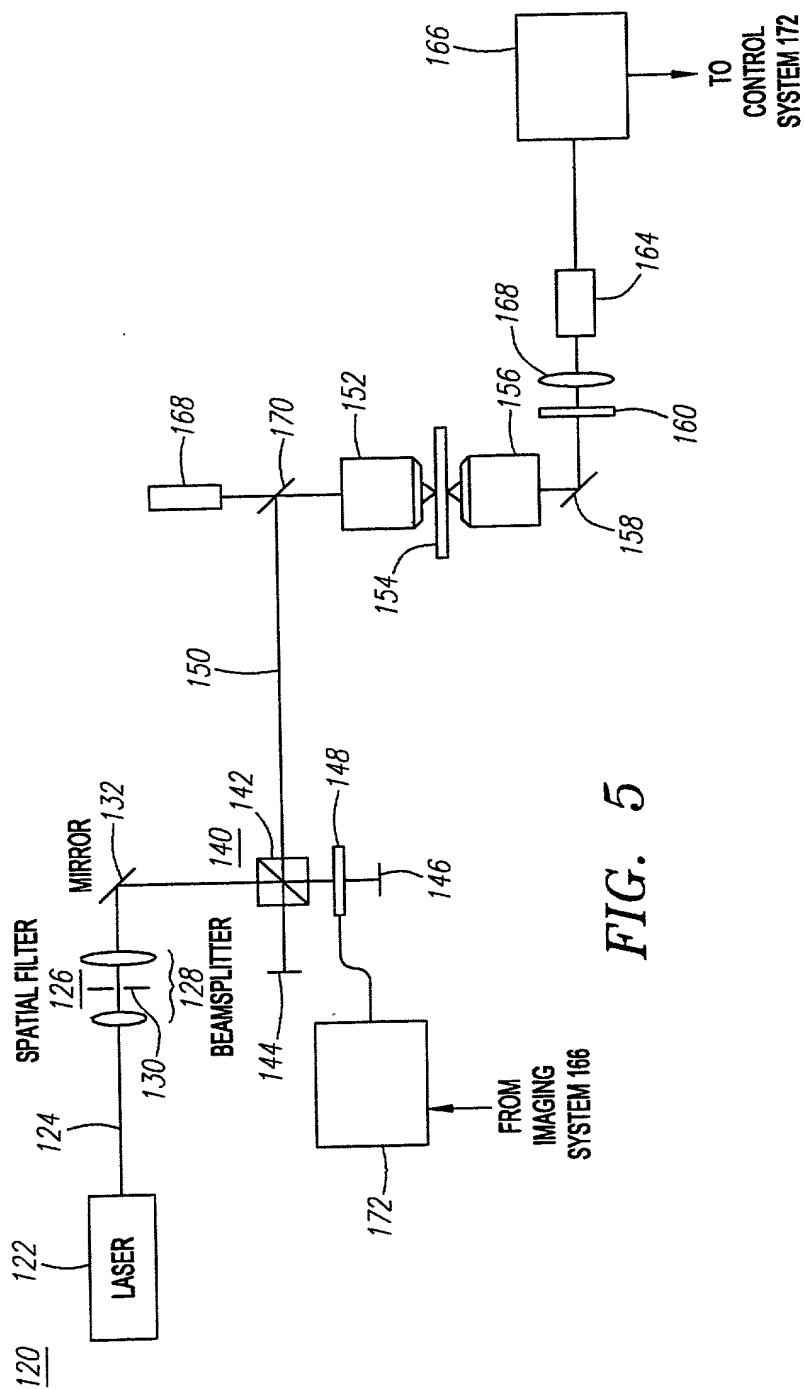


FIG. 5

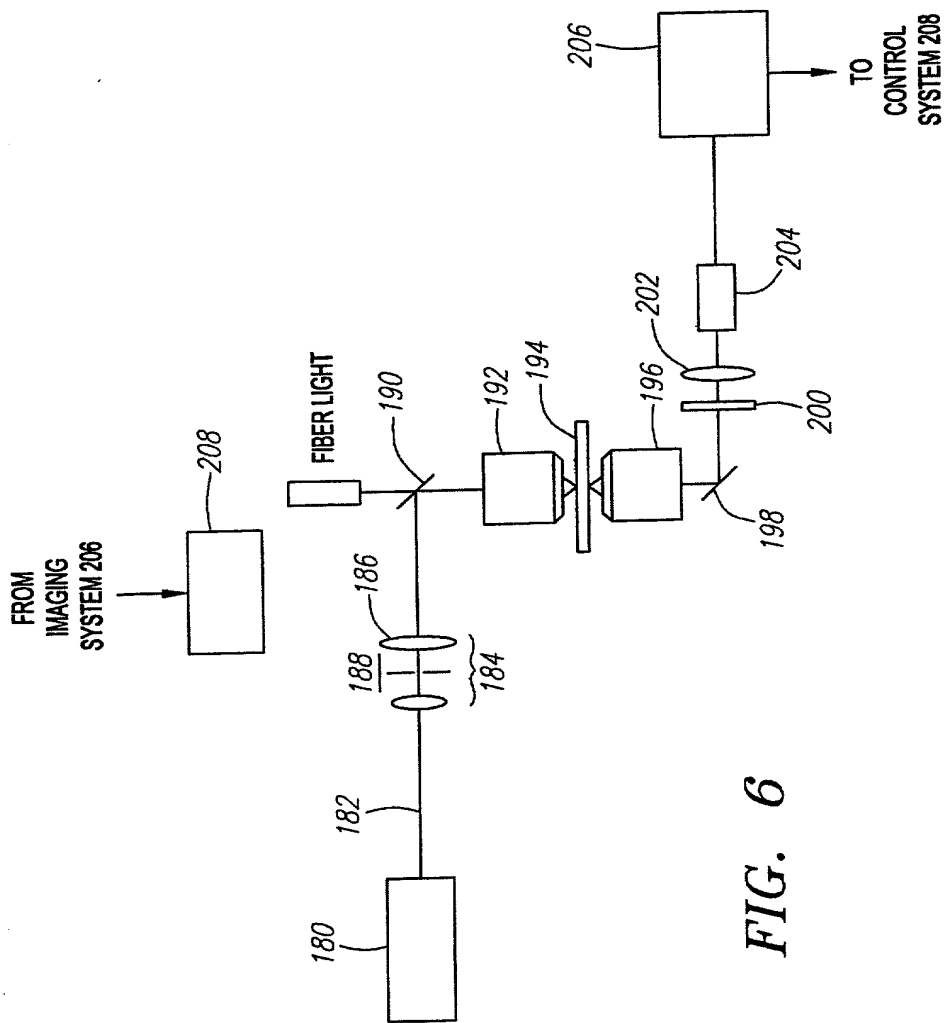
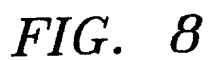
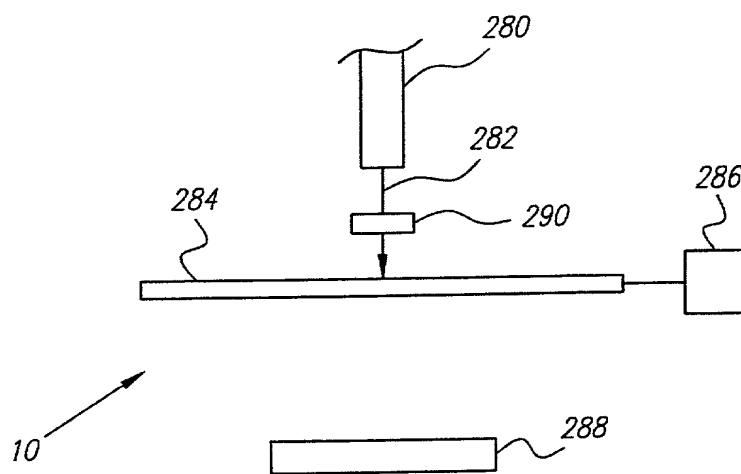
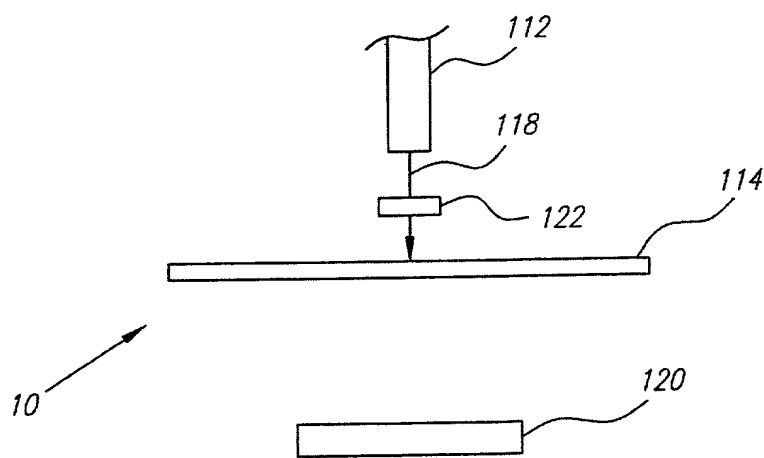


FIG. 6

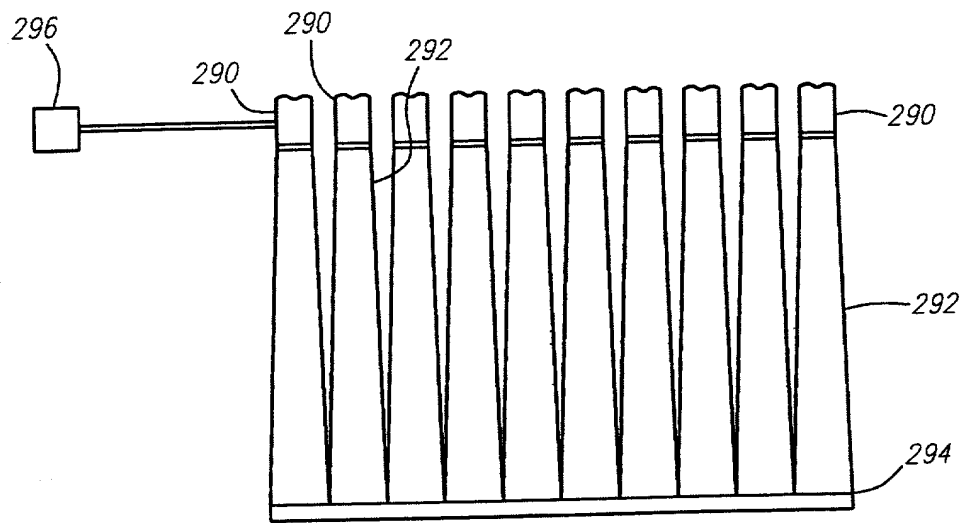
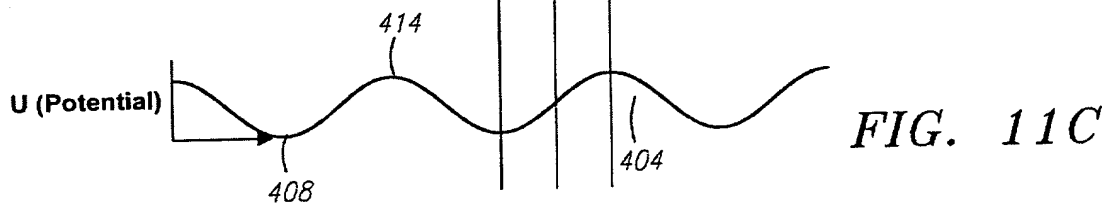
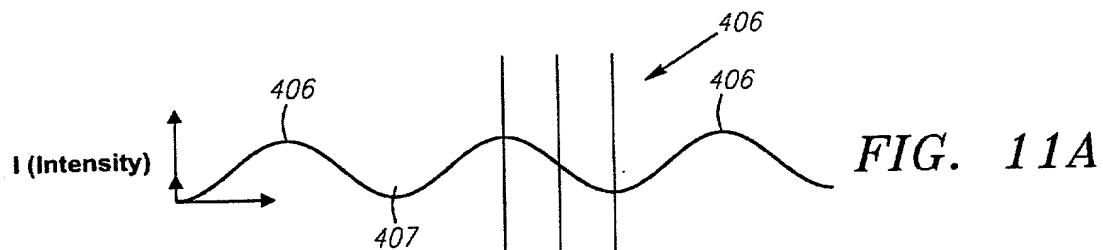




**FIG. 9A**



**FIG. 9B**

*FIG. 10*



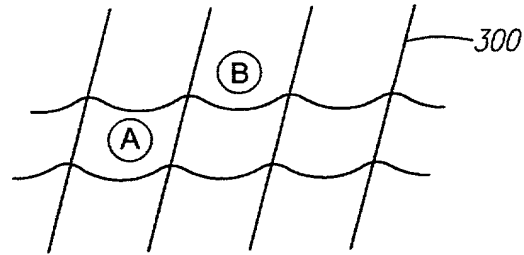


FIG. 12A

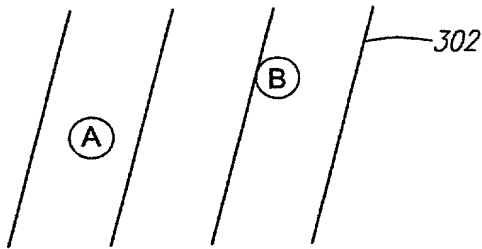


FIG. 12B

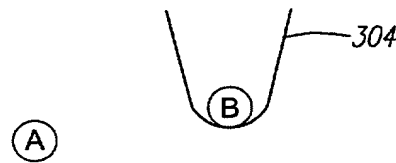


FIG. 12C

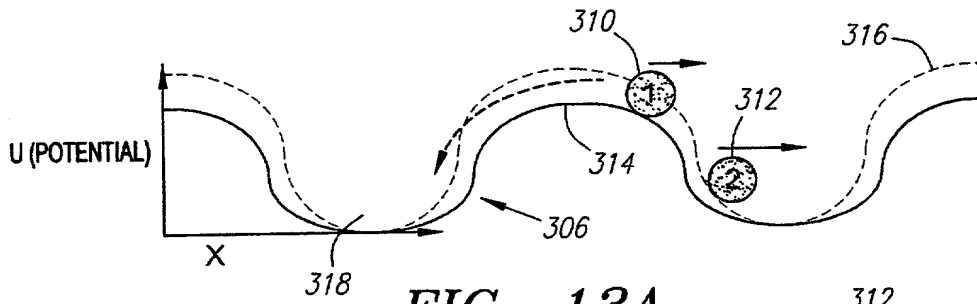


FIG. 13A

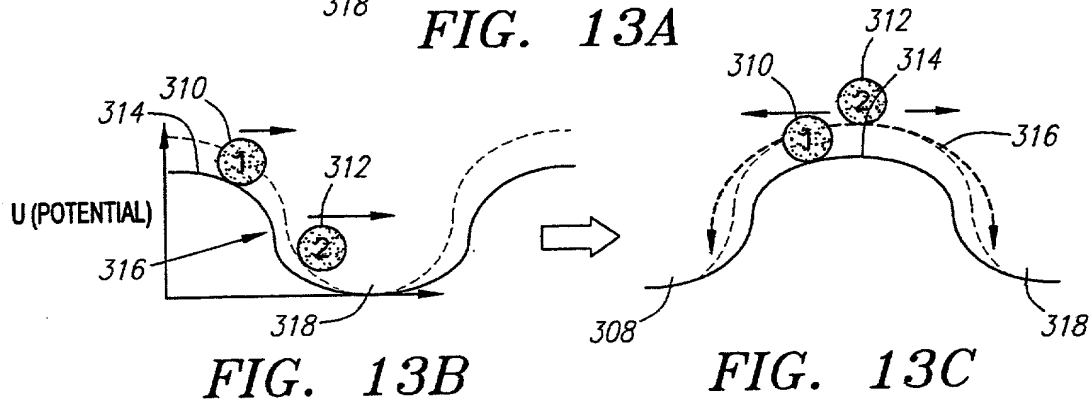


FIG. 13B

FIG. 13C

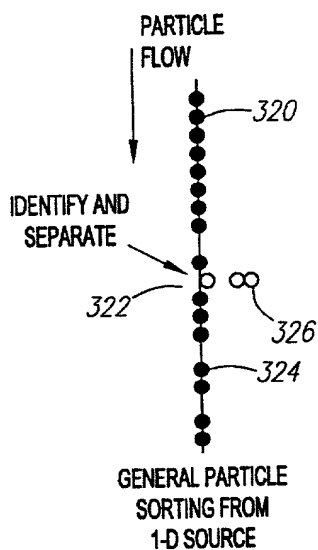


FIG. 14A

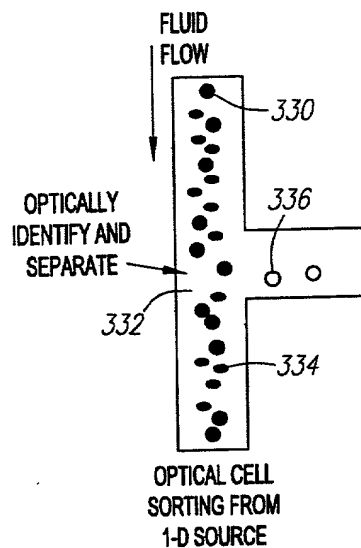


FIG. 14B

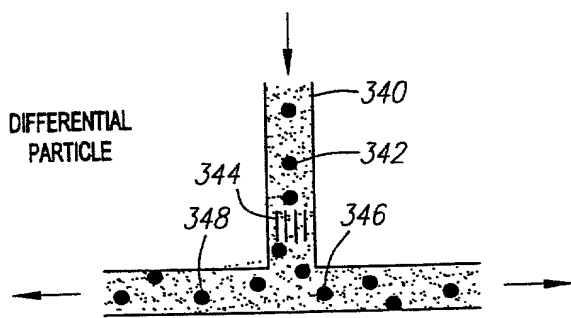


FIG. 15

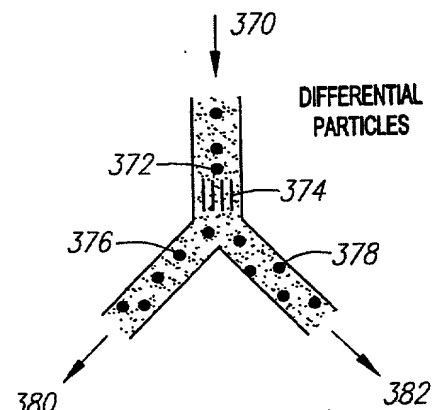


FIG. 17

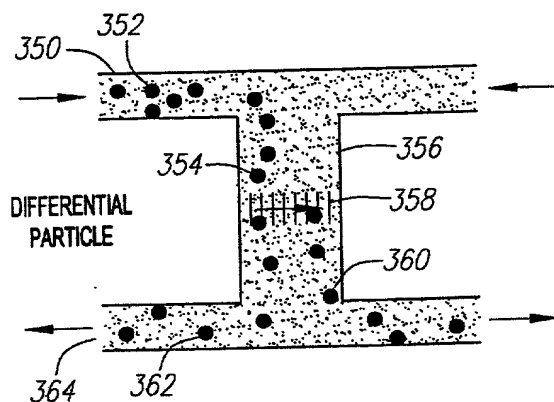


FIG. 16

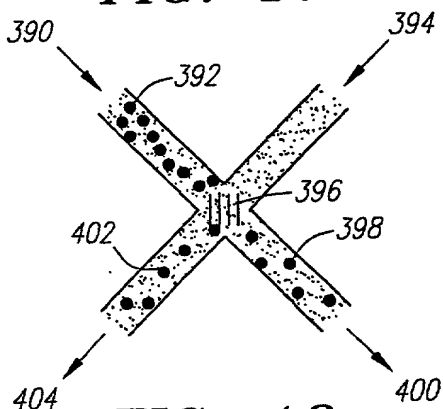


FIG. 18

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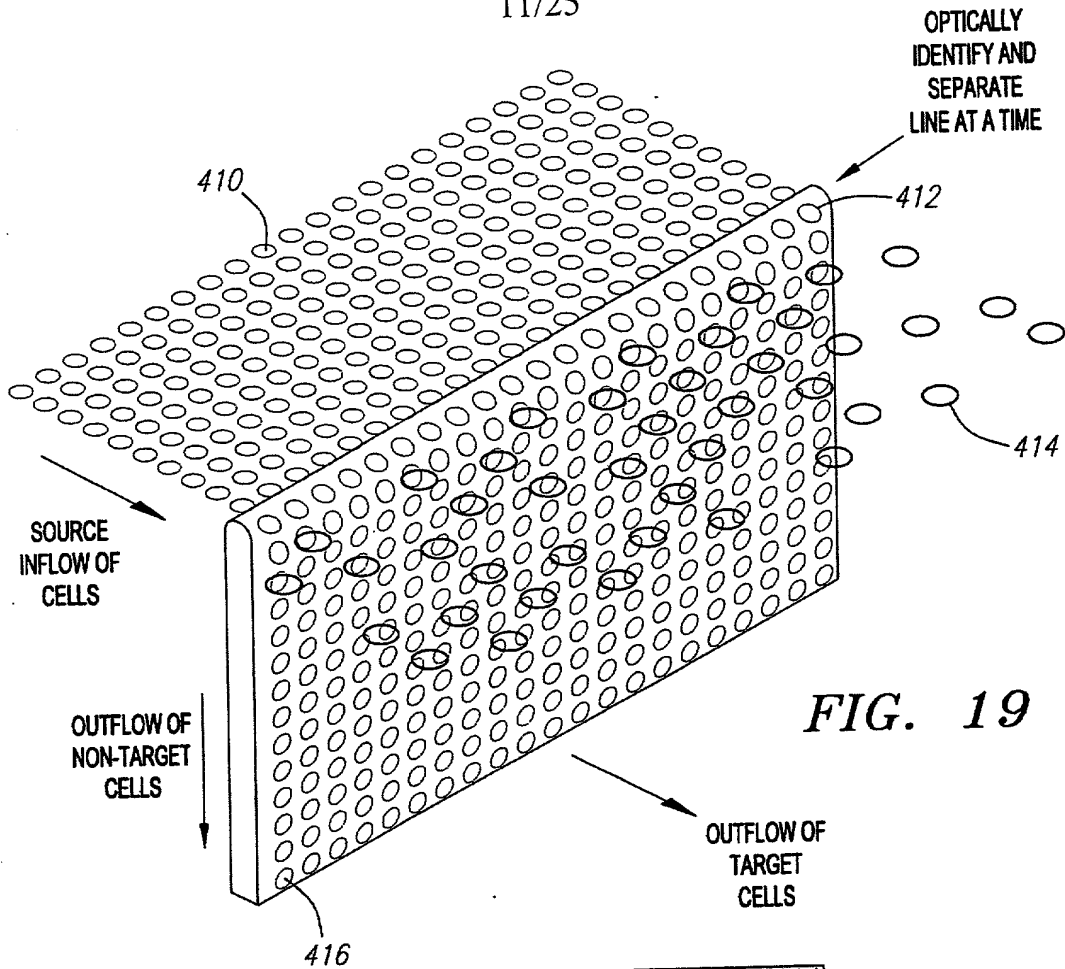


FIG. 19

FIG. 20

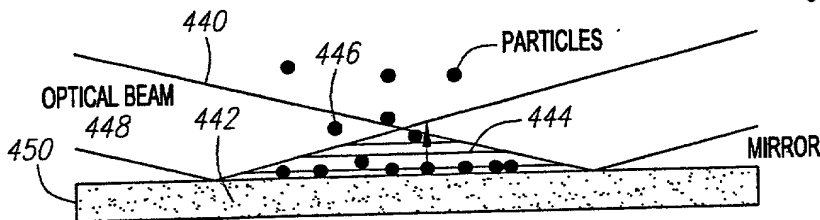
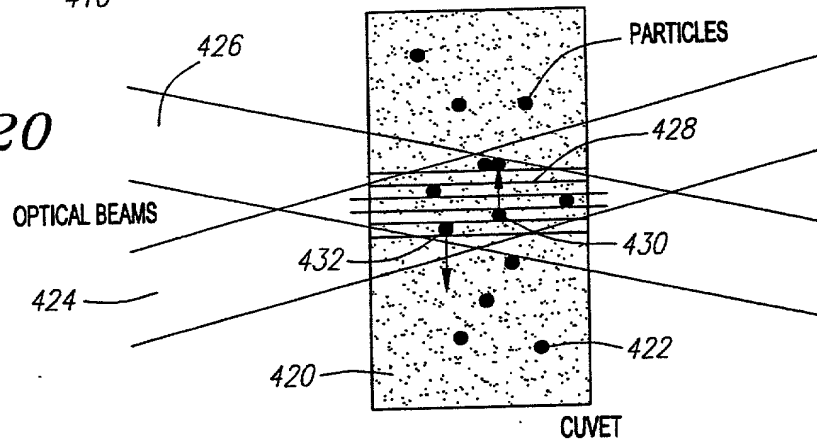


FIG. 21

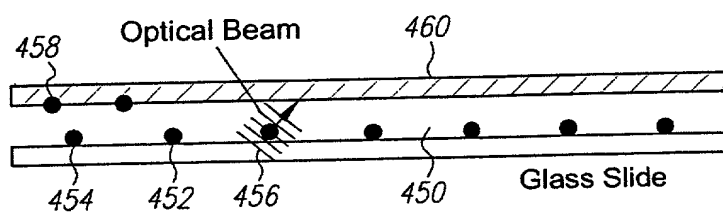


FIG. 22

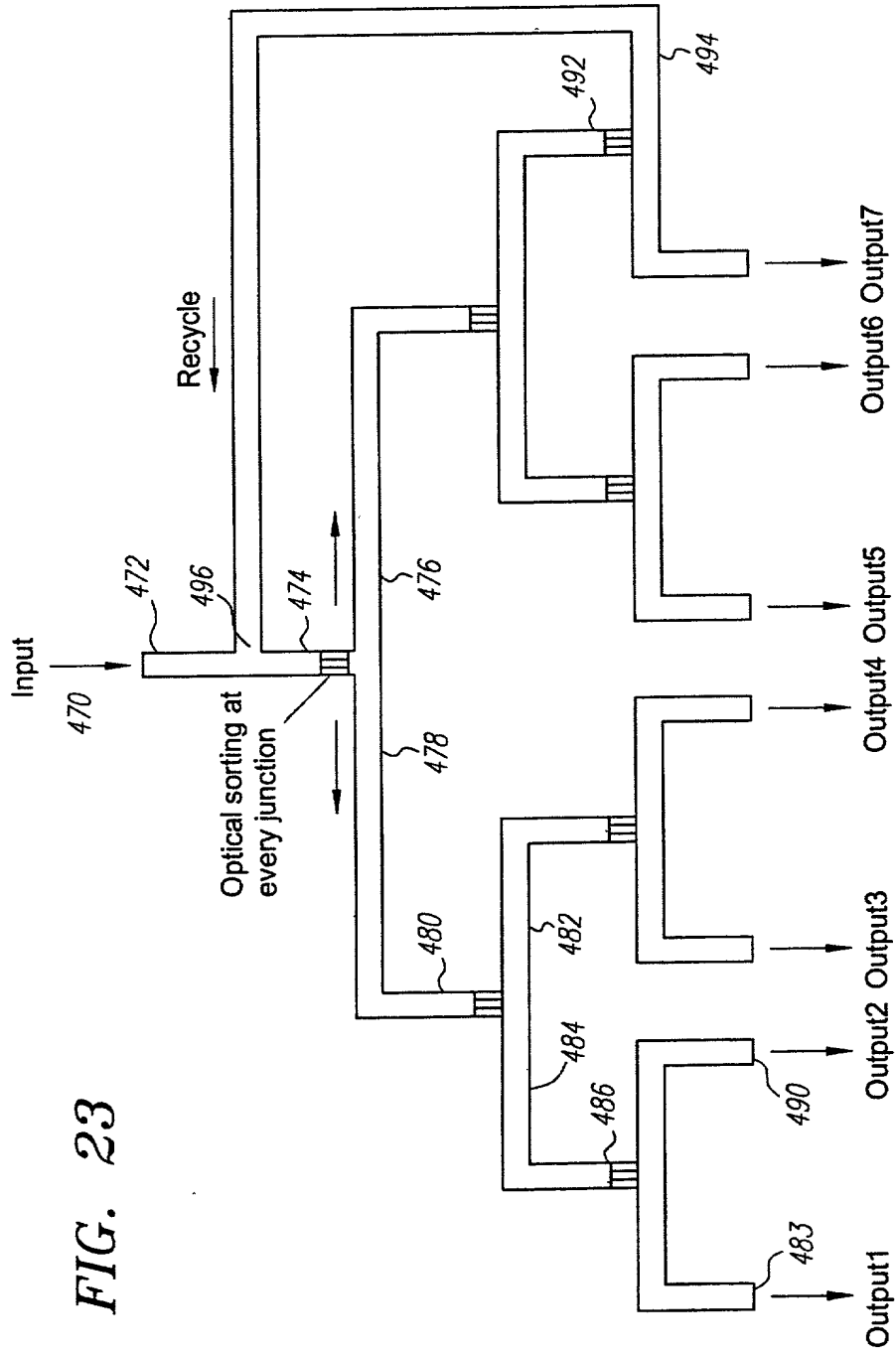


FIG. 23

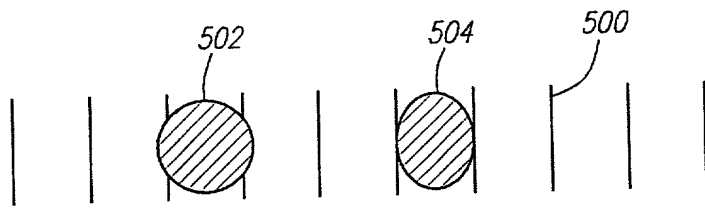


FIG. 24

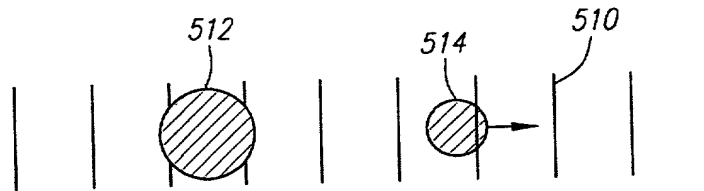
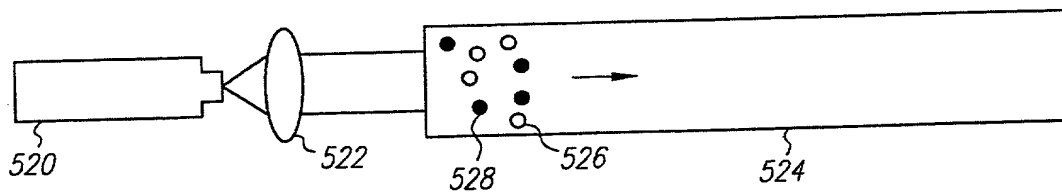


FIG. 25

Before:

SCATTER FORCE SEPARATION



After:

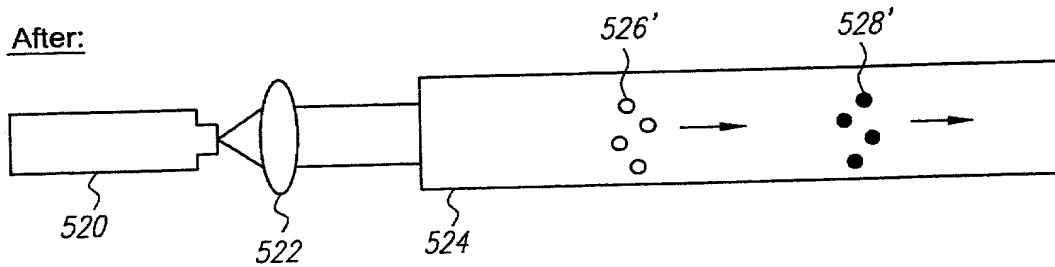


FIG. 26

FIG. 27A

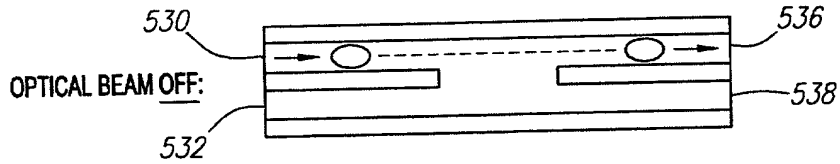
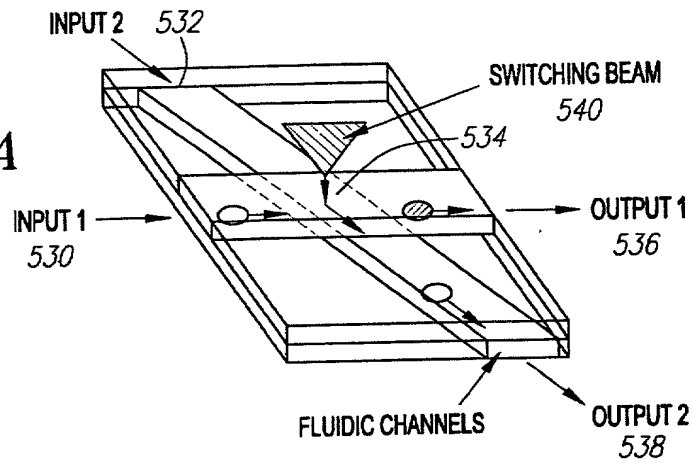


FIG. 27B

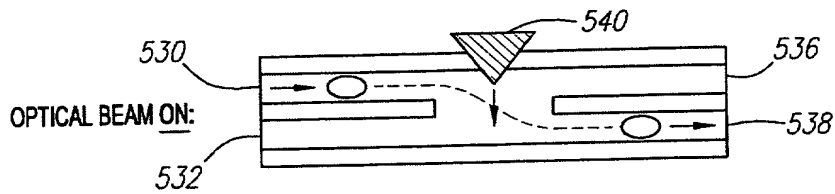


FIG. 27C

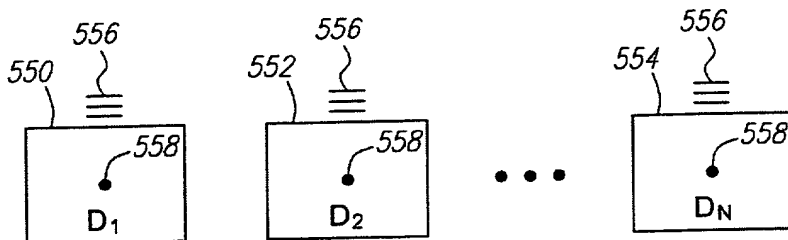
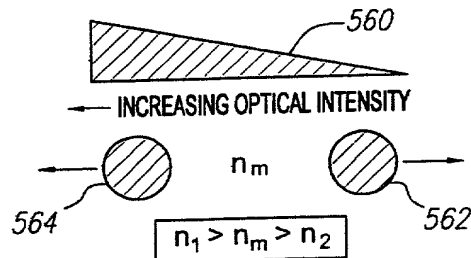
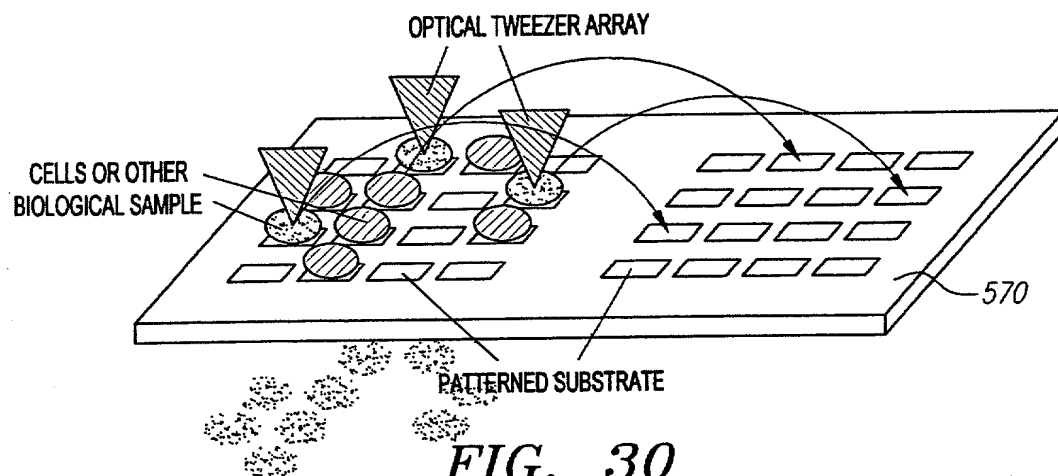
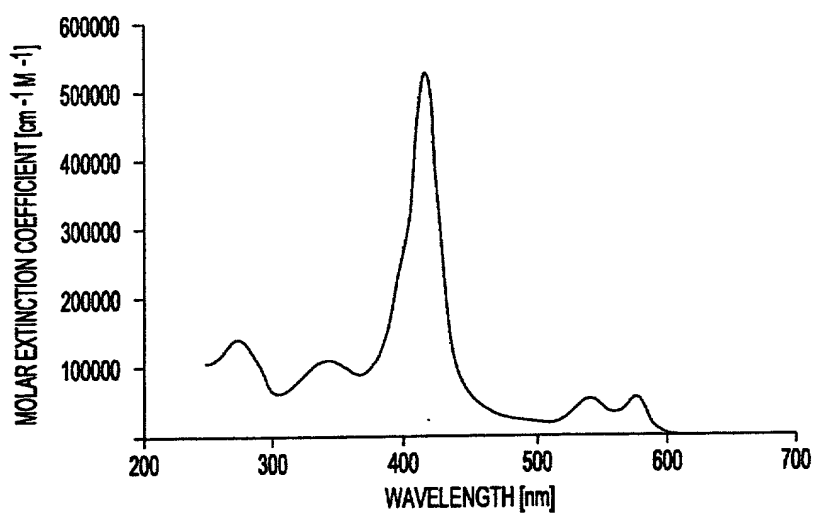


FIG. 28

FIG. 29



*FIG. 30*HEMOGLOBIN - O<sub>2</sub> ABSORPTION SPECTRUM*FIG. 31*



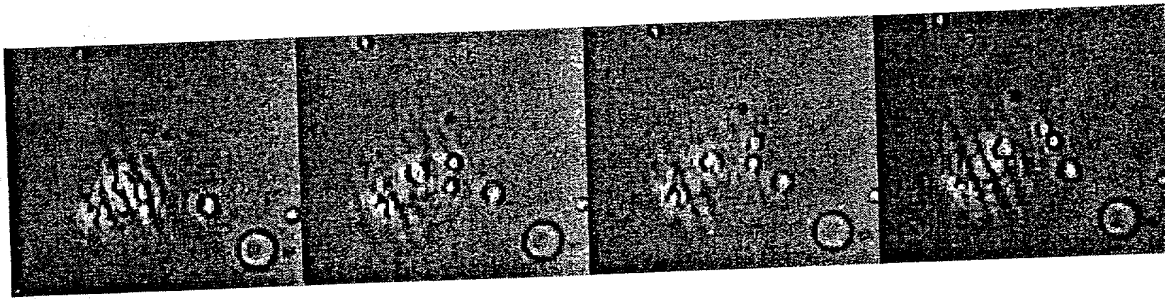


FIG. 32

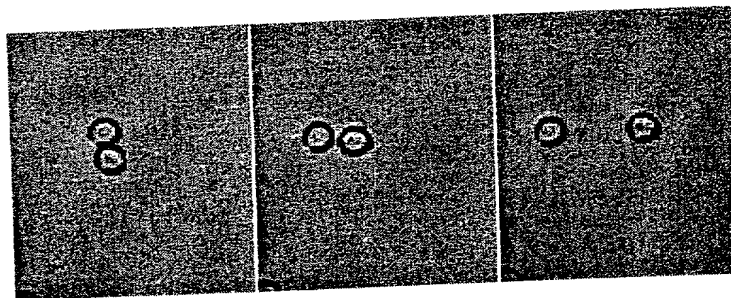
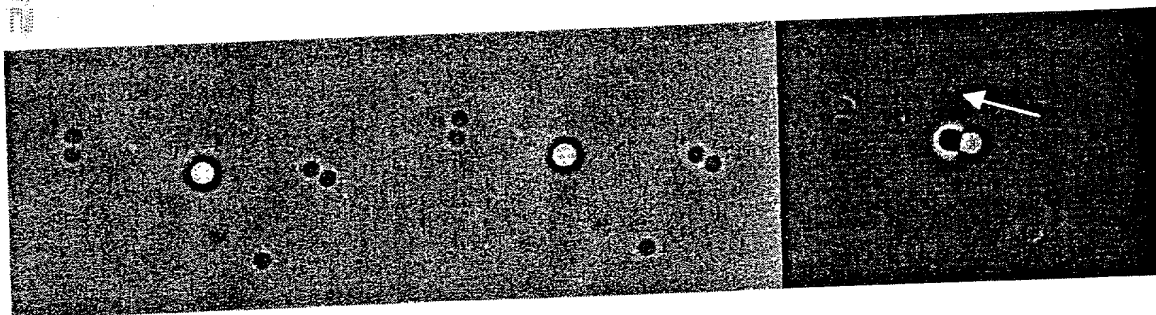


FIG. 33



Before

After

Difference

FIG. 34

DISTRIBUTION OF ESCAPE VELOCITIES  
 READING TAKEN IN PBS/1% BSA BUFFER  
 RAIN-X COATED SLIDE/CYTOP COATED COVERSIP

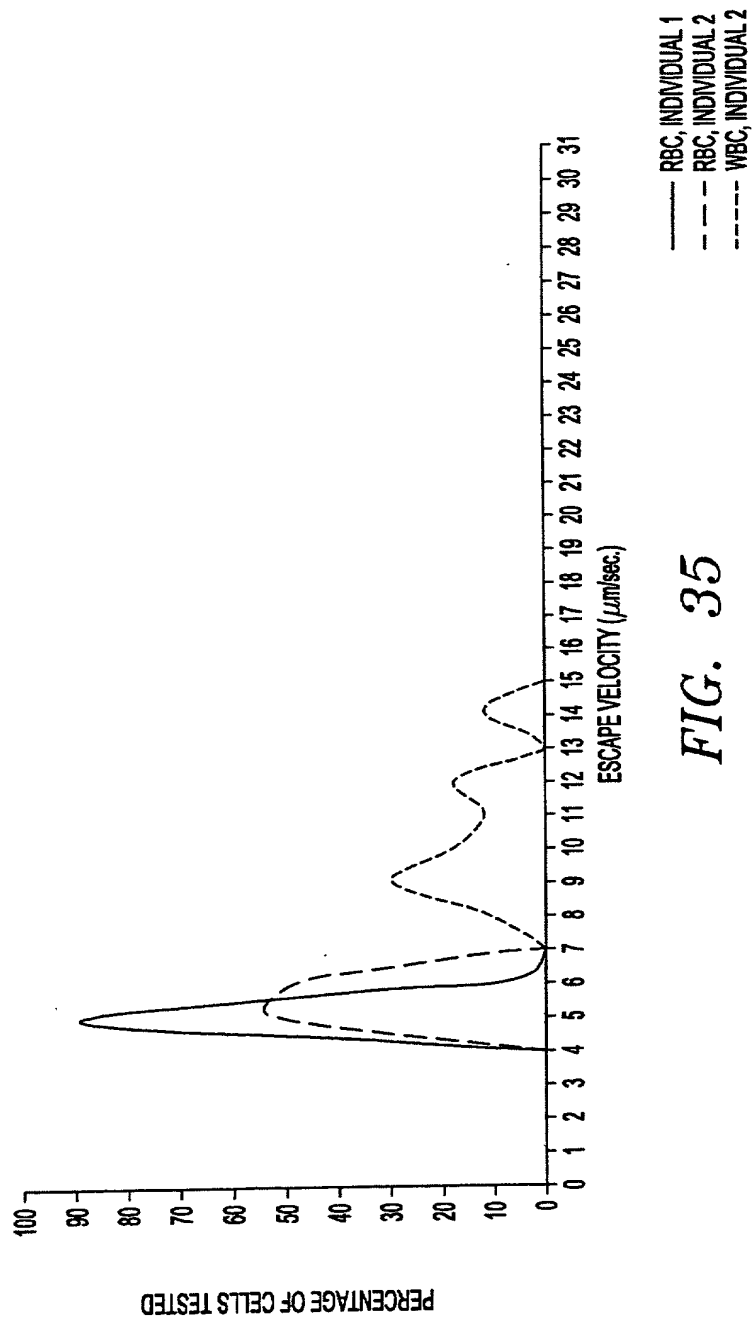
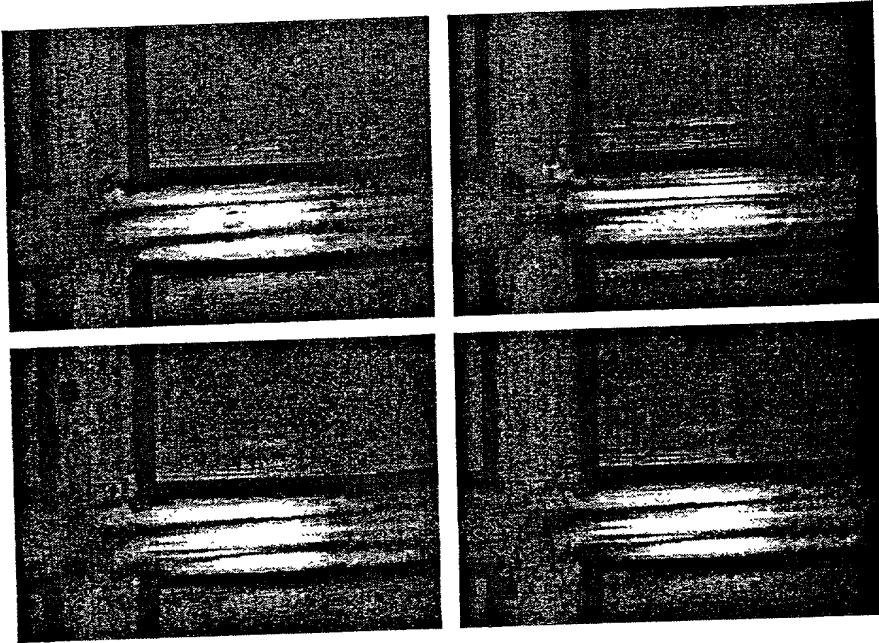


FIG. 35



*FIG. 36*

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FIG. 37A

FIG. 37B

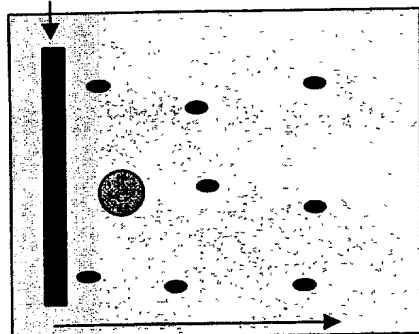
FIG. 37C

Laser beam

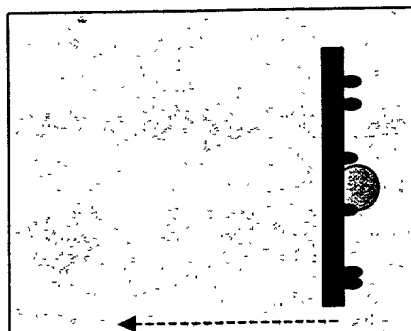
Phase1

Phase2

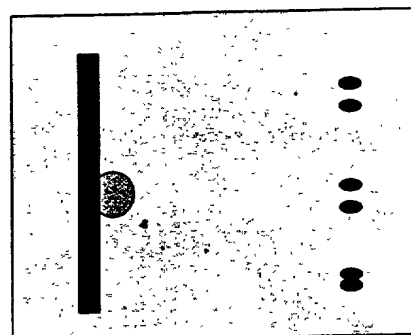
Phase3



Slow continuous movement

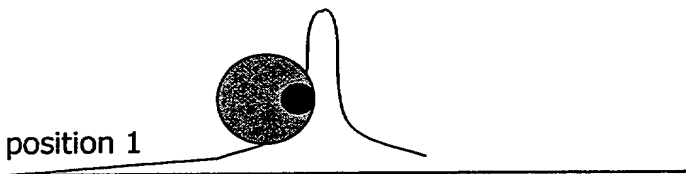


Quick stepping movement

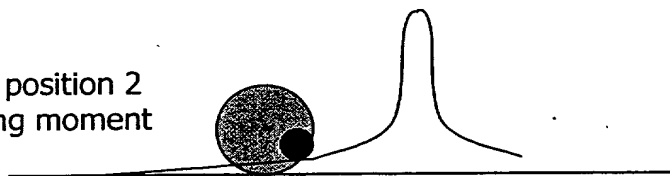


● WBC    ● RBC

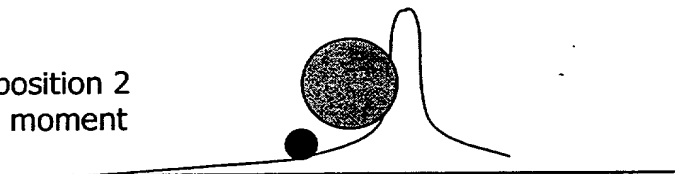
Beam position 1



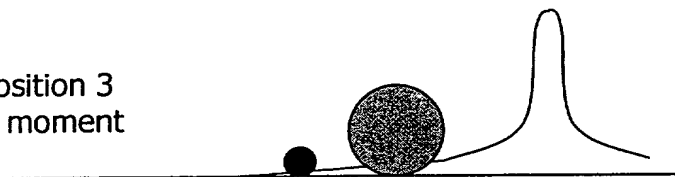
Beam position 2  
Starting moment



Beam position 2  
Ending moment



Beam position 3  
Starting moment



Beam position 3  
Starting moment

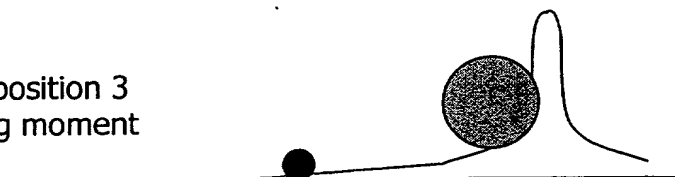


FIG. 38

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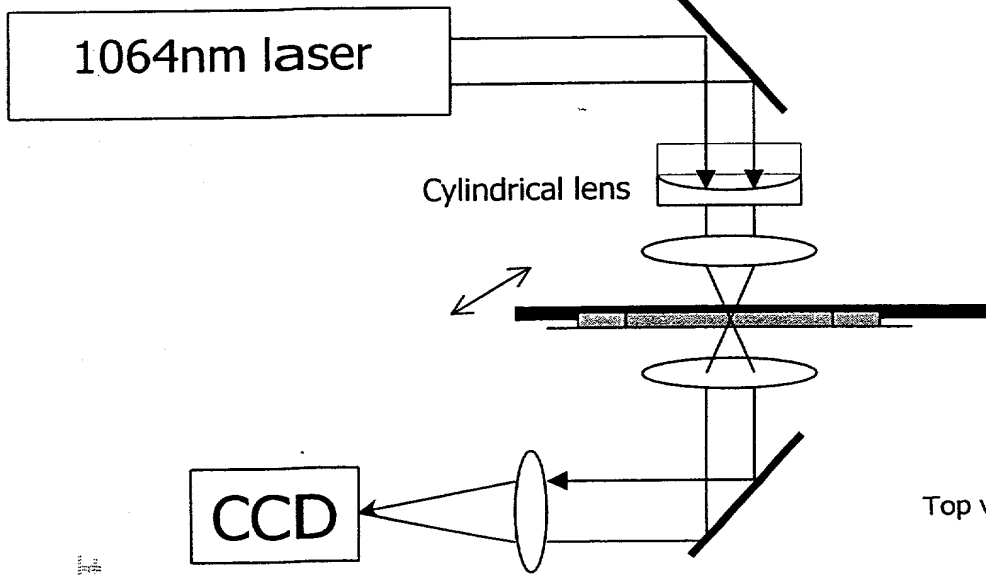


FIG. 39A

Top view

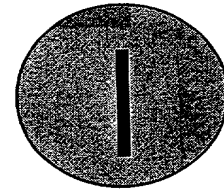


FIG. 39B

Using diffractive optics

Using fast scanning

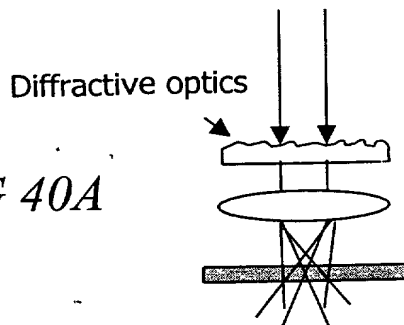


FIG 40A

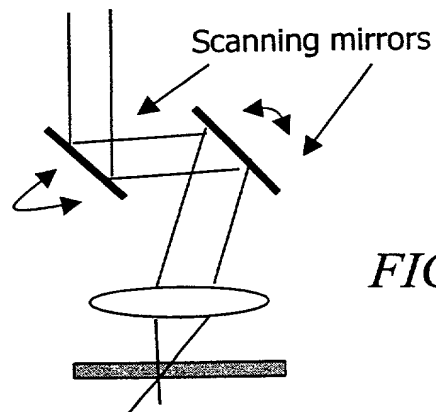


FIG. 40C

Top view

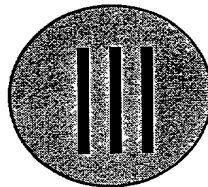


FIG. 40B

Top view

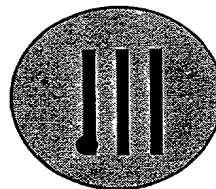
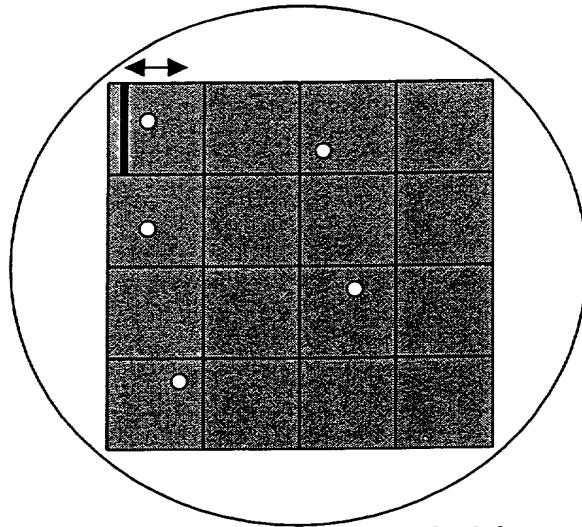


FIG. 40D



Sectioned sample field

FIG. 41

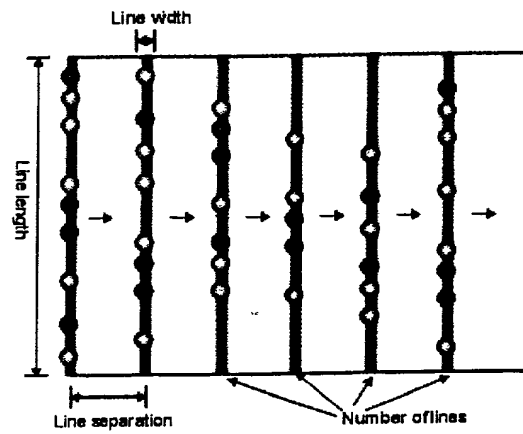


FIG. 42

# Phase 1

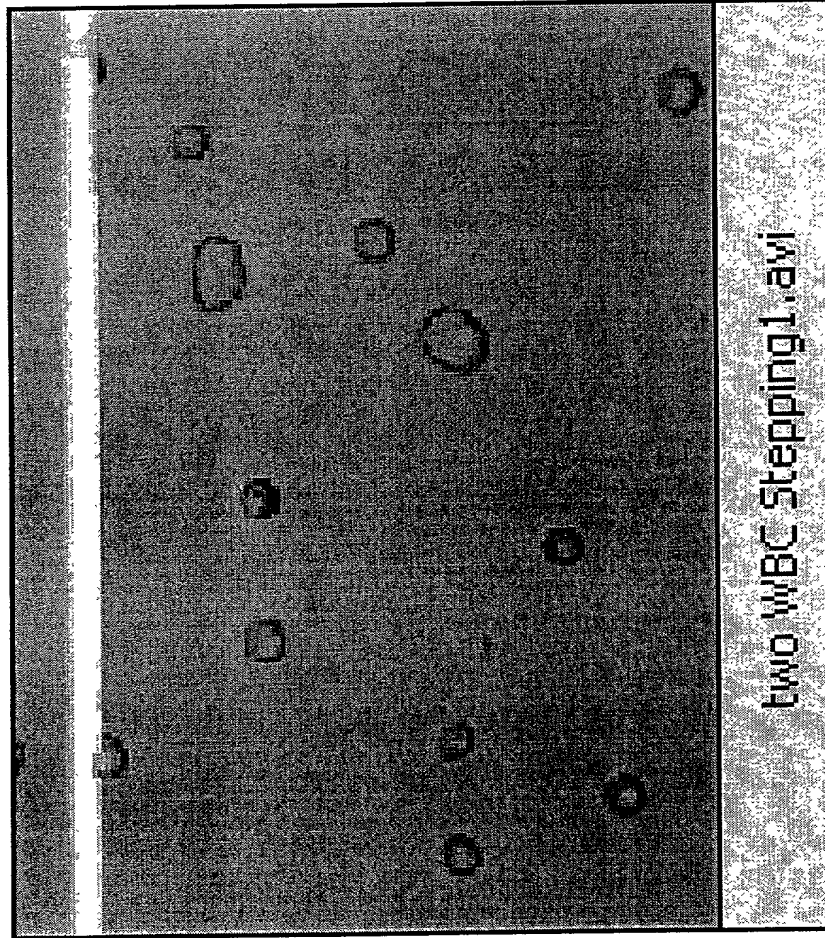


FIG. 43A

## Phase 2

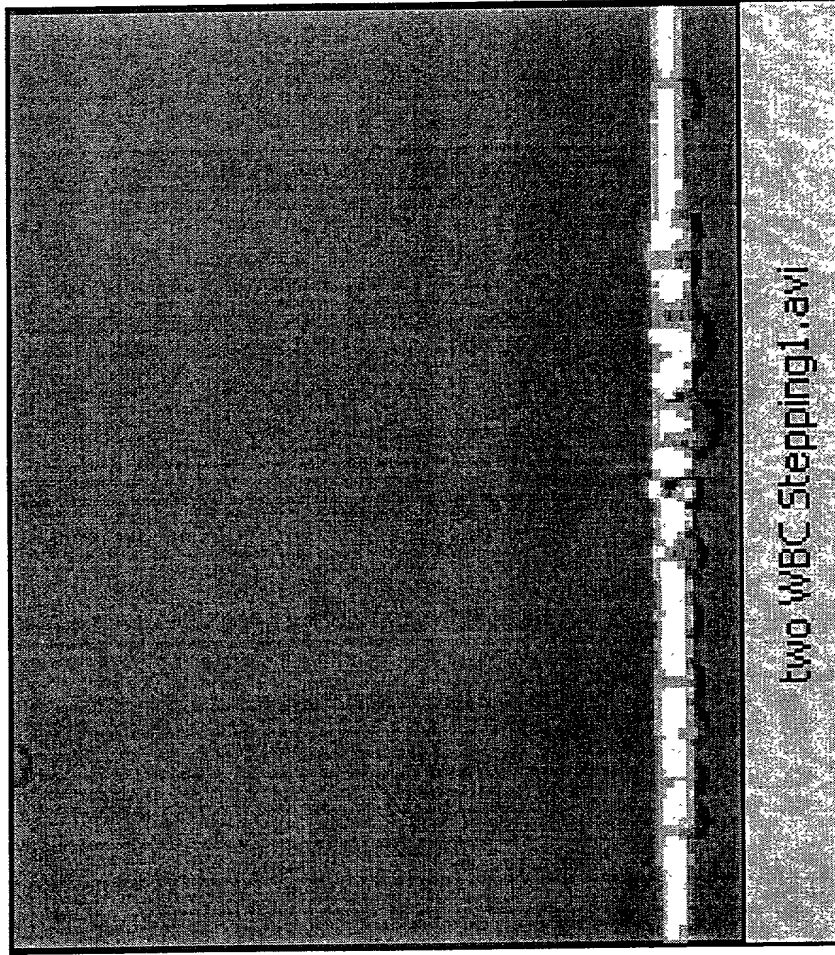


FIG. 43B



## Phase 3

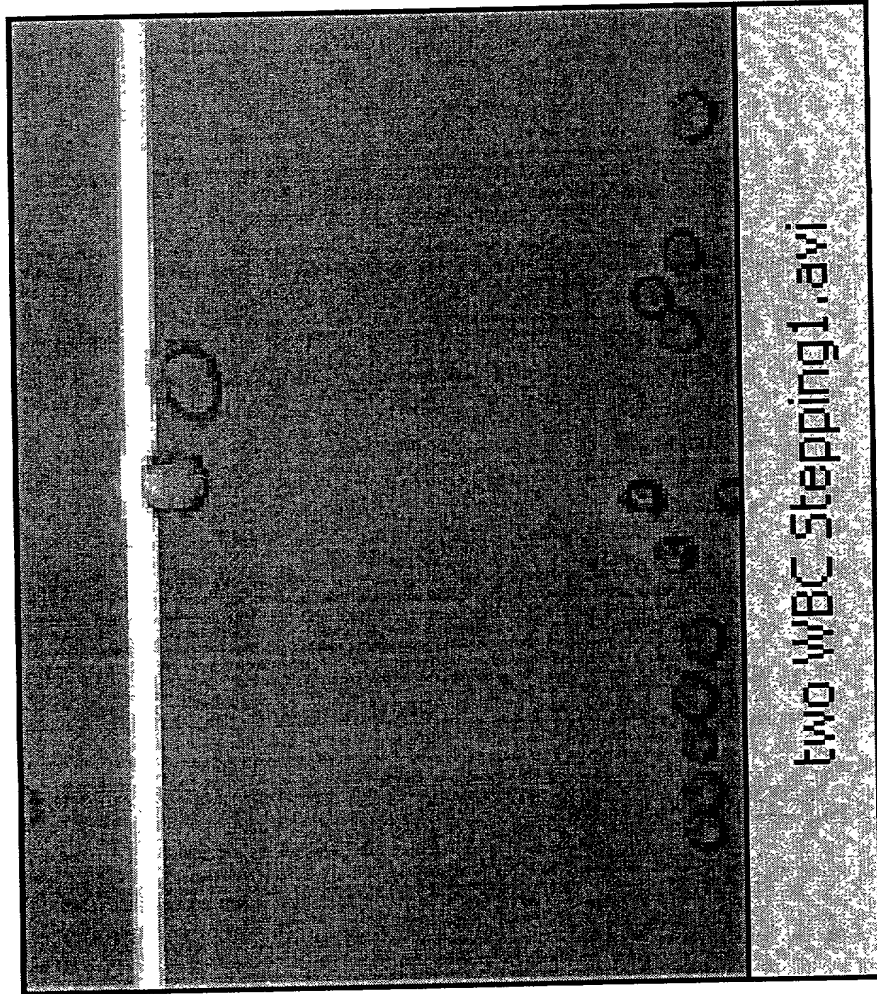


FIG. 43C